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Software requirements prioritization tool using a hybrid technique.

ABSTRACT

Requirements Prioritization (RP) helps to discover the most desired requirements. System developers are not always fully able to implement stakeholders' requirements when time, scope and cost are limited. To solve this challenge, requirements must be prioritized. A few prioritization techniques have been proposed but none has been automated. Furthermore, rank reversals (updating rank status whenever requirements are added or deleted) is a major limitation of existing techniques.This paper uses AHP and Cost-Value methods for requirement prioritization while addressing rank reversal. The techniques are able to rank every requirement based on relative value and implementation cost. The AHP method allows an input from the system developers and system users and makes a pair wise comparison. The Cost value method ranks the requirements in terms of the ratio of value to cost. As requirements increases, human inconsistency in judgment increases. AHP calculates inconsistency and if it is less than 0.1 then stakeholders should consider new input values. The prioritization methods are implemented into a prioritization tool which creates a list of the prioritized requirements as output, then consequently generates a scatter plot to display relative values and implementation costs of input requirements.This tool is evaluated in terms of efficiency (total time taken for prioritization) and ease of use.

Keyword: Software requirements; Requirement prioritization; Prioritization techniques.